

Application News

SSI-LCMS-035

Liquid Chromatography Mass Spectrometry

High Sensitivity Detection of 100pg of Sulfadimethoxine using the LCMS-2020

Summary

Sulfadimethoxine response by ESI (+) was optimized using flow injection analysis (FIA). Isocratic LC conditions were applied to reproducibly detect 100 pg injected with signal to noise (S/N) of at least 39588 and a % CV = 4.73.

Introduction

Sulfadimethoxine (**Figure 1**) is a sulfonamide antibiotic used to treat a wide range of infections found in Animals and in humans in some parts of the world. Because of this, monitoring its presence is important.

Materials and Methods

FIA was used to optimize all source and instrument conditions. An optimized isocratic LC condition was established empirically and then six injections of 100 pg on column all with at least a S/N \geq 39588 with a % CV = 4.73 were obtained. Table 1 shows the results for the repeatability and sensitivity testing of Sulfadimethoxine while Figure 2 shows a representative chromatogram.

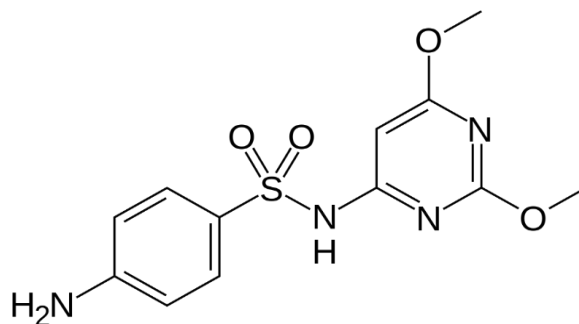


Figure 1. Chemical structure of sulfadimethoxine.

Peak#	m/z	Ret. Time	Area	S/N
1	311.00	2.342	13935	39800.00
2	311.00	3.506	16619	43561.00
3	311.00	4.680	13849	39588.00
4	311.00	5.845	16592	43670.00
5	311.00	7.016	13065	38992.00
6	311.00	8.179	16208	42626.00

Table 1. Results of the repeatability and sensitivity testing conducted using sulfadimethoxine. S/N \geq 39588, %CV=4.73, n=6

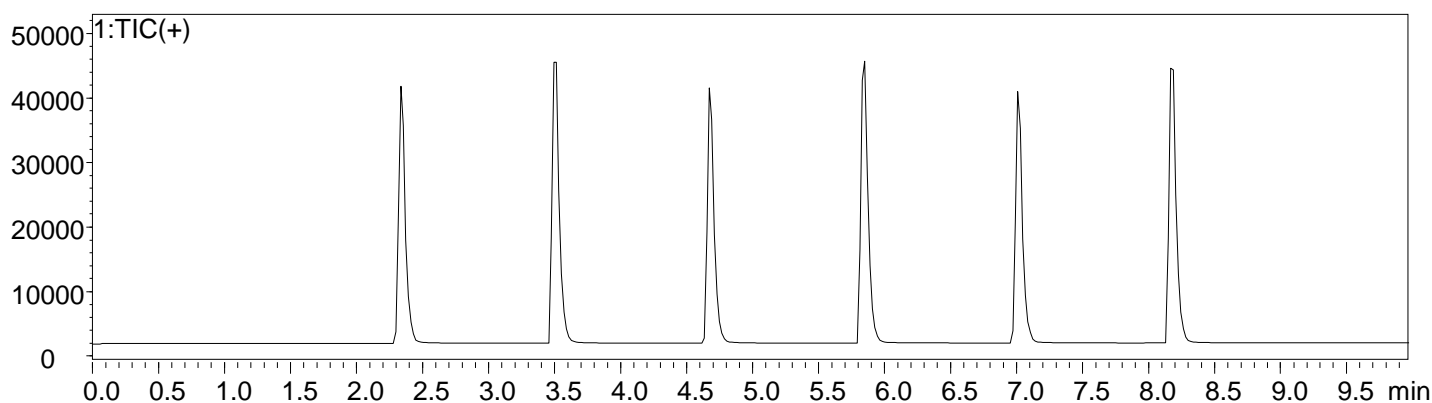


Figure 2. A representative chromatogram of 100pg of sulfadimethoxine.

Founded in 1875, Shimadzu Corporation, a leader in the development of advanced technologies, has a distinguished history of innovation built on the foundation of contributing to society through science and technology. Established in 1975, Shimadzu Scientific Instruments (SSI), the American subsidiary of Shimadzu Corporation, provides a comprehensive range of analytical solutions to laboratories throughout North, Central, and parts of South America. SSI maintains a network of nine regional offices strategically located across the United States, with experienced technical specialists, service and sales engineers situated throughout the country, as well as applications laboratories on both coasts.

For information about Shimadzu Scientific Instruments and to contact your local office, please visit our Web site at www.ssi.shimadzu.com



Shimadzu Corporation
www.shimadzu.com/an/

SHIMADZU SCIENTIFIC INSTRUMENTS, INC.
Applications Laboratory
7102 Riverwood Drive, Columbia, MD 21045
Phone: 800-477-1227 Fax: 410-381-1222
URL <http://www.ssi.shimadzu.com>

For Research Use Only. Not for use in diagnostic procedures. The content of this publication shall not be reproduced, altered or sold for any commercial purpose without the written approval of Shimadzu. The information contained herein is provided to you "as is" without warranty of any kind including without limitation warranties as to its accuracy or completeness. Shimadzu does not assume any responsibility or liability for any damage, whether direct or indirect, relating to the use of this publication. This publication is based upon the information available to Shimadzu on or before the date of publication, and subject to change without notice.

© Shimadzu Scientific Instruments, 2012
First Edition: October, 2012